

PATENT**REMARKS**

Claims 1-19 are currently pending in this application. Claims 1, 3-5, 7 and 10 have been amended. New claims 13-19 have been added. No new matter has been added by these amendments or additions. Applicant has carefully reviewed the Office Action and respectfully requests reconsideration of the claims in view of the remarks presented below.

Claim Rejections Under 35 U.S.C. §103

Claims 1-7 and 9-12 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,128,533 (Florio) in view of U.S. Patent No. 6,711,438 (McClure '438).

Independent claims 1, 11 and 12 relate to methods and devices for determining atrial rates using unipolar sensing and combipolar sensing for different portions of the atrial signal. For example, method claim 1 recites tracking refractory periods within both atrial and ventricular channel signals; and determining an atrial rate using unipolar sensing outside the refractory periods and using combined unipolar/bipolar sensing within the refractory periods.

Florio describes two different types of atrial rate measurements: an intrinsic or actual atrial rate, which is determined using all of the P-waves detected in a sensed atrial signal, and a sensed functional atrial rate (described as being less than the intrinsic/actual atrial rate), which is determined using only P-waves outside refractory periods. See column 7, lines 12-21 and 40-49. It is significant that regardless of the presence of any atrial signal portions, e.g., refractory periods, an intrinsic/actual rate is always determined the same way: using all P-waves detected in atrial signals sensed using only one type of sensing technique, i.e., a single electrode. See column 7, line 3. It is also significant that the sensed functional atrial rate is also always determined the same way: using only P-waves outside of refractory periods detected in atrial signals sensed using only one type of sensing technique. In summary, there is no switching or

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changing of sensing techniques within the respective intrinsic/actual atrial rate and sensed functional atrial rate determination schemes of Florio.

McClure '438 discloses atrial rate determination techniques that are based on atrial channel signals obtained using combipolar sensing. Events detected in the atrial channel signal both within, and outside refractory periods may be used in the rate determination process. See column 3, line 39 through column 4, line 32. While unipolar and bipolar sensing techniques are mentioned in the background, McClure does not teach or suggest the use of different sensing techniques for different portions of the atrial signal.

In view of the foregoing, Applicant submits that neither Florio nor McClure '438 teach or suggest the use of unipolar sensing for portions of sensed signals outside refractory periods and combined unipolar/bipolar sensing for portions of sensed signals within the refractory periods, as included in independent claims 1, 11 and 12. Accordingly, Applicant requests reconsideration of the §103 rejections of these claims and their respective dependent claims.

Claim 8 was rejected under 35 U.S.C. §103(a) as being unpatentable over Florio and McClure '438 in view of U.S. Patent No. 6,625,490 (McClure '490).

In view of the foregoing analysis of independent claim 1 in view of Florio and McClure '438, Applicant believes that the rejection of claim 8 under §103 is rendered moot as claims 8 depend from an allowable independent claim.

New Claim 13-19

New claim 13-19 recite additional features related to the atrial rate determination method of claim 1 and device of claim 11. Neither Florio nor McClure discloses the features of these claims.

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CONCLUSION

Applicant has made an earnest and bona fide effort to clarify the issues before the Examiner and to place this case in condition for allowance. Therefore, allowance of Applicant's claims 1-19 is believed to be in order.

Respectfully submitted,

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Date

David S. Sarisky
David S. Sarisky
Attorney for Applicant
Reg. No. 41,288
818-493-3369

CUSTOMER NUMBER: 36802